

REMARKS

The Office Action mailed January 25, 2006, has been received and reviewed. Claims 1-16, and 22-27 are currently pending in the application. Claims 1-16, and 22-27 stand rejected. Claims 17-21 were previously canceled. Applicants respectfully request reconsideration of the application.

Information Disclosure Statement

Please note that an Information Disclosure Statement was filed herein on December 16, 2005, and that while copies of the PTO/SB/08B were returned with the outstanding Office Action, one reference appears to be omitted from consideration by the Examiner. Applicants note that on page 2 of 3 of the December 16, 2005 Information Disclosure Statement, the top article to Chwirka, J.D. et al. has not been initialed. Applicants respectfully request that the information cited on the PTO/SB/08B be made of record herein and that an initialed copy of the PTO/SB/08B evidencing consideration of the cited article be returned to the undersigned attorney. Applicants have supplied a clean copy of page 2 of 3 of the PTO/SB/08B of the December 16, 2005 Information Disclosure Statement for the Examiner's convenience.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,232,265 to Bruening et al.

Claims 1-16 and 22-27 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bruening et al. (U.S. Patent No. 6,232,265) ("Bruening" hereafter). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 1-16 and 22-27 are improper

because Bruening does not teach or suggest each element of the rejected claims and there is no motivation to modify the disclosure of Bruening to make the claimed invention.

The Examiner asserts that Bruening discloses a method comprising dissolving a mixture of pentaerythritol and Ag/KOH catalyst, adding acrylonitrile and pouring into water; and polymerizing. (Office Action, p. 2). Independent claims 1 and 25 of the referenced application recite, in part, a method comprising dissolving *polyacrylonitrile* (PAN). Applicants maintain that Bruening does not teach or suggest dissolving PAN. Example 3 of Bruening discloses adding monomeric acrylonitrile. As those of ordinary skill in the art know, acrylonitrile is used principally as a precursor monomer in the manufacture of synthetic polymers such as PAN, but also including acrylic fibers, nylon and synthetic rubber. Example 3 of Bruening teaches that only *after* the addition of monomeric acrylonitrile, does the acrylonitrile polymerize. The Examiner asserts that “Applicant appears to admit that polyacrylonitrile is disclosed” (Office Action, pp. 5). However, that is not the case and Applicants respectfully note that Example 3 fails to teach or suggest the nature of the polymer formed by the acrylonitrile and whether it is a PAN as in the claimed invention. What is clear, is that the monomer acrylonitrile disclosed in Example 3 of Bruening does not provide a teaching or a suggestion of dissolving PAN as recited by independent claims 1 and 25.

The Examiner also asserts that “it would have been obvious to an ordinary artisan to form a PAN solution as well.” *Id.* at pp. 5 and 7. However, Example 3 discloses a specific process for making tetrakis including the use of a monomeric acrylonitrile. Without the use of impermissible hindsight, there is no suggestion, motivation or expectation of success for one of ordinary skill in the art to modify the disclosure of Example 3 to produce an adsorption medium according to the claimed invention. There are significant differences between the chemical properties and the reactivities of a monomeric acrylonitrile and PAN and one of ordinary skill in the art would know that making the suggested substitution would create an unpredictable outcome with unknown success. As such, there is no suggestion or motivation to modify the disclosure of Bruening to make the claimed invention.

Furthermore, Applicants maintain that Bruening does not teach or suggest an adsorption medium comprising PAN and at least one metal hydroxide as required by independent claim 1 and *forming* an adsorption medium comprising PAN and at least one metal hydroxide as required by independent claim 25. Applicants respectfully submit that the above-mentioned claim

element does not merely recite an intended use of the claimed invention. Rather, the element in independent claim 1 recites that the adsorption medium comprises PAN and at least one metal hydroxide and independent claim 25 recites forming such an adsorption medium. Since the particulate solid support of Bruening does not include PAN and at least one metal hydroxide, Bruening does not teach or suggest this element as recited in either claim 1 or claim 25. And, even for arguments' sake, Bruening does not disclose or suggest whether or not the polymerized acrylonitrile comprises at least one metal hydroxide.

As such, Applicants affirm that a *prima facie* case of obviousness has not been established and Bruening does not teach or suggest all the elements of claims 1 and 25. Furthermore, dependent claims 2-16 and 26-27 should be allowable, *inter alia*, for respectively depending from allowable independent claims 1 and 25.

Regarding independent claim 22, the Examiner asserts that Bruening discloses "polymerized acrylonitrile." *Id.* at p. 3. However, as discussed previously, Example 3 of Bruening fails to teach or suggest what kind of polymer is formed by the acrylonitrile and whether it is an adsorption media comprising a PAN matrix and at least one metal hydroxide as required by independent claim 22.

Furthermore, the Examiner states that it would have been obvious to one of skill in the art to use "10-85% elemental metal because Bruening '265 discloses 40% Ag/KOH, and removal by filtration, which would obviously, to one of ordinary skill, motivate 10-85% of Ag after removal of liquid by filtration with a balance of polyacrylonitrile." *Id.* However, Applicants respectfully affirms that, *without the use of inappropriate hindsight*, one of ordinary skill in the art would not be motivated to use a waste product of Example 3 in Bruening to make the claimed invention. Applicants affirm that the excess polymerized acrylonitrile in Example 3 was removed by filtration and did not constitute any part of any adsorption medium. There is no suggestion in Bruening to use the polymerized acrylonitrile as an adsorption medium. One of ordinary skill in the art at the time of the invention would have no expectation of success of forming an adsorption medium according to the claimed invention by using the excess polymerized acrylonitrile from Bruening. As such, it is *only* with the use of impermissible hindsight and in view of the referenced application that the claimed invention would be considered obvious in light of Bruening.

For the foregoing reasons, Applicants submit that a *prima facie* case of obviousness has

not been established for independent claim 22 because, Bruening does not teach or suggest all the elements of claim 22 and Bruening provides no suggestion, motivation or expected success to one of ordinary skill in the art to make the claimed invention.

Additionally, dependent claims 23 and 24 are allowable, *inter alia*, as depending from allowable independent claim 22.

Therefore, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) obviousness rejections of claims 1-16 and 22-27 and request reconsideration of the claims.

CONCLUSION

Claims 1-16, and 22-27 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, the Examiner is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



Stephen R. Christian
Registration No. 32,687
Attorney for Applicants
P.O. Box 1625
Idaho Falls, ID 83415-3899
Phone: (208) 526-9140
Fax: (208) 526-8339

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